May-13-13 1:10:42 PM

Quality Control

Item ID: D20 Revision ID: Item Name: Mou	1)52 Inting Bracket	2D #	Accept	*N900	040	100	)* s	etup Stai	I VI	S1* S2*
Start Date: 5/13 Required Date: 5/3 Reference:	3/13 Start Qty: 10.00	*40* *10*		Cust Item   Customer:						. 1/
Approvals: Pro	ocess Plan: MLゴ	Date: 13-05-15	Tooling:	D	ate:		R	Run Stai	171	R1*
	O:		<b>SPC (Y/N):</b>		ate:			Sto	*N	R2*
Sequence ID/ Work Center ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr									
D2052	Rev D									
100			0.00				_			
*100*	FLOW WATER JET	•					30	0		Ae
Waterjet	Memo		0.00							13:11:03
FLOW CNC Waterjet	Duna Dani	Dwg D2052								
5052 · 090"	Prog Rev:_	irection along 3.878" ****								
110	QC2- Inspect parts off m	achine FAI/FAIB	0.00							
*11 <b>0</b> *	Memo		0.00				30	٥		Ac :13:11.03

DQA: Date:

NCR: Yes / No WORK ORDER NON-CONFO	RMAI
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NCE / UPDATE QA Closed: Date: **AGAINST DEPARTMENT/PROCESS** DISPOSITION Work Order: Engineering Skid-tube Crosstube Water Jet Rework Small Fab Prod. Eng. Coor. Quality Machining Part No. Scrap Thermoforming Finishing Rec/Store/Packaging Other Use-as-is Supplier NCR No. Work Order Update Large Fab Composite Action Sign & Description of work order update Initial Root Verification Chief Eng Description Date QC Inspector or Non-conformance Date Step Qty Cause Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved **FAULT CATEGORY Landing Gear** General Ovalized Pressure/Forced Bending Bend Grain Over/Under tolerance Temperature/Cure Centre Not Concentric to O/S BOM/Route Hardware Weld Broken/Damaged Part Incorrect Inspection Incomplete Cracks Wrong Stock Pulled Crushed/Crimped Instructions Incomplete/Unclear Part Lost/Missing **Burrs** Maintenance Part Moved Cuffs Contamination Countersink Mislabeled **Positioned Wrong** Heat Treat Other Misread Power Loss/Surge Inspection Strip in Tube Cut Too Short **Drill Holes** Offset Ripples in Bend

Out of Calibration

Out of Sequence

**Outside Dimensions** 

Turning Sequence

Wave/Twist in Tube

**Torque Waves in Extrusion** 

Drawing

Finish

Folio

May-13-13 1:10:42 PM

Item ID: Revision ID: Item Name:	D2052  Mounting Bra	acket		Accept	<b>'N9</b> 000	<b>14</b> 0	100	)* ፡	Setup	Start Stop	171.	S1*	
Start Date: Required Date: Reference:	5/13/13 5/31/13	Start Qty: 10.00 Req'd Qty: 10.00	*10* *10*		Cust Item ID Customer:	<b>)</b> :							
Approvals:		an:	Date:	Tooling: SPC (Y/N):		te:				Start Stop	*NI *NI	₹1* ₹2*	
Sequence ID/ Work Center II 120 *120* QC Quality Control	D	Operation Description QC8- Inspect parts - seco	and check	Set Up/ Run Hoursas 0.00 27 9-89	Tool ID	Tool#	Plan Code	Accept Qty 30	Reje Qty		Reject Number	Insp. Stamp	
130 *130* Brake NC Brake NC		NC BRAKE  Memo  Form as per	Dwg D2052 using CNC B	72 8-89		DAS 30 9-89		30					13 lu -
140 *14\\n^* QC Quality Control		QC5- Inspect part comple	eteness to step on W/O	0.00 B/11/Cr	}			36 , Com	7				_

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DQA: Date: **WORK ORDER NON-CONFORMANCE / UPDATE** NCR: Yes / No QA Closed: Date: **AGAINST DEPARTMENT/PROCESS DISPOSITION** Work Order: Skid-tube Crosstube Water Jet Engineering Rework Machining Small Fab Prod. Eng. Coor. Quality Scrap Part No. Thermoforming Finishing Rec/Store/Packaging Other Use-as-is Supplier NCR No. Work Order Update Large Fab Composite Description of work order update Action Sign & Initial Root Verification QC Inspector Chief Eng Description Date Step Qty or Non-conformance Date Cause Doc/Data Equip/Tooling Operator Material Setup Other

	and the same of th							
Landing G	iear	General		_				_
	Bending	Bend		Grain		Ovalized		Pressure/Forced
	Centre Not Concentric to O/S	BOM/Route		Hardware		Over/Under tolerance		Temperature/Cure
	Cracks	Broken/Damaged		Inspection Incomplete	L	Part Incorrect		Weld
	Crushed/Crimped	Burrs		Instructions Incomplete/Unclear		Part Lost/Missing	L	Wrong Stock Pulled
	Cuffs	Contamination		Maintenance		Part Moved		
	Heat Treat	Countersink		Mislabeled		Positioned Wrong		-
	Inspection Strip in Tube	Cut Too Short		Misread		Power Loss/Surge	L	Other
	Ripples in Bend	Drill Holes		Offset				
	Torque Waves in Extrusion	Drawing	Ĺ	Out of Calibration				
	Turning Sequence	Finish		Out of Sequence				

Outside Dimensions

**FAULT CATEGORY** 

Wave/Twist in Tube

Folio

Process
Supplier
Training
Unapproved

Page 3

May-13-13 1:10:42 PM

Quality Control

D2052 Accept Item ID: Setup Start \*N900040100\* Revision ID: Item Name: Mounting Bracket \*10\* **Start Qty: 10.00 Start Date:** 5/13/13 **Cust Item ID:** Req'd Qty: 10.00 Required Date: 5/31/13 **Customer:** Reference: Run Date: Approvals: Process Plan: Tooling: Date: Stop SPC (Y/N): Date: Date: Sequence ID/ Operation Set Up/ **Tool ID** Tool # Plan Reject Reject Accept Insp. **Work Center ID** Description Code **Qty Qty** Number Stamp **Run Hours** Chemical Conversion Coat per QSI005 4.1 0.00 150 28 B.11.7 \*150\* HandFinish 0.00 Memo Hand Finishing 160 Black Sandtex(Ref:4,3/3.7) per QSI005 4.3 0.00 DAS 30 \*160\* 34 0.00 Powdercoat Memo 9-89 START TIME: Powder Coating OVEN TEMPERATUR FINISH TIME: QC3- Inspect Part Finish 0.00 DAS 170 OC Memo

		DQA:	Date:	
NCR: Yes /	WORK ORDER NON-CONFORMANCE / UPDATE			
		OA Closed:	Date:	

							_			(	QA Closed:	Da	ate:		_
Work Orde	ri:				DISPOSITION				AGAINST (	DEP	PARTMENT	PROCESS			
Part N	lo				Rework Scrap Use-as-is Work Order Update		Thern	Skid-tube  Machining  noforming  Large Fab	Crosstube Small Fab Finishing Composite			Water Jei d. Eng. Coor e/Packaging Supplie		Engineering Quality Other	
Root				Descri	ption of work order update	lı	nitial	A	ction		Sign &				•
Cause	Date	Step	Qty		or Non-conformance	Ch	ief Eng	Des	cription		Date	Verification	on	QC Inspector	
Doc/Data															
Equip/Tooling		ļ								- 1					
Operator		Ì								- 1					
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						AUL	T CATE	GORY							_
Landi	ng Gear				General				г					l	
	Bending			.	Bend	-	Grain		}		Ovalized		$\vdash$	Pressure/Forced	
	Centre N	ot Conce	ntric to	o/s	BOM/Route	$\vdash$	Hardwa		-	_	Over/Under			Temperature/Cure	
	Cracks			<u> </u>	Broken/Damaged	$\vdash$	•	ion incomplete	,, ,	_	Part Incorred		-	Weld	
	Crushed	'Crimped		<u> </u>	Burrs			tions Incomplete	/Unclear	_	Part Lost/Mi	issing	ш	Wrong Stock Pulled	
	Cuffs			<u> </u>	Contamination	$\vdash$		enance	-	—	Part Moved				
	Heat Tre			-	Countersink		Mislabe		}	$\overline{}$	Positioned V	=		اما	
	Inspection	-	Tube		Cut Too Short	<b> </b>	Misrea	đ	l		Power Loss/	Surge		Other	_
	Ripples i			<u> </u>	Drill Holes	$\vdash$	Offset	California.							-
	<b>⊢</b> — '	Vaves in I		n	Drawing	-		Calibration					·············		-
		Sequence		-	Finish	$\vdash$	i .	Sequence							_
	Wave/Tv	vist in Tu	be		Folio	I	Outside	Dimensions							_

May-13-13 1:10:42 PM Accept \*N900040100\* Item ID: D2052 Setup Start **Revision ID:** Mounting Bracket Item Name: \*10\* **Start Date:** 5/13/13 **Start Qty: 10.00 Cust Item ID:** Required Date: 5/31/13 Req'd Qty: 10.00 \*10\* **Customer:** Reference: Run **Tooling:** Process Plan: \_\_\_\_\_ Date: Date: Approvals: Stop SPC (Y/N): QC: Date: Date: Reject Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Insp. Description Qty Qty Number Stamp **Work Center ID Run Hours** Code Identify as per dwg & Stock Location: 6A 0.00 180 \*180\* 0.00 Packaging Memo Packaging OC21- Final Inspection - Work Order Release 0.00 190 13-11-01 \*190\* QC 0.00 Memo Quality Control

										DQA:	Date:	:
NCR: Y	es / N	0			WORK ORDER NON-C	O	VFOR	MANCE / UP	DATE	04.61	Data	
	<del></del>						<del></del>	····		QA Closed:	Date	
Work Orde	nė.				DISPOSITION				AGAINST DE	PARTMENT	PROCESS	
,					Rework	1		Skid-tube	Crosstube	1	Water Jet	Engineering
Part N	lo.				Scrap	1 1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is		Thern	noforming	Finishing	Rec/Sto	e/Packaging	Other
NCR N	lo				Work Order Update			Large Fab	Composite	]	Supplier	
Root			T	Descri	ption of work order update		Initial	Ac	tion	Sign &		
Cause	Dat	e Step	Qty		or Non-conformance	1	ief Eng		ription	Date	Verification	QC Inspector
Doc/Data			† · · · ·									
Equip/Tooling			İ									
Operator			ļ									
Material		1										
Setup												
Other												
Process						1						
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u					F.	AUL	LT CATE	GORY				
Landi	ng Gear				General		7		_	7	_	7
	Bendi	-			Bend	<u></u>	Grain			Ovalized	<u> </u>	Pressure/Forced
	$\vdash$	Not Conce	entric to	o/s	BOM/Route	<u></u>	Hardwa		<u> </u>	Over/Under	<del> </del>	Temperature/Cure
	Crack			lacksquare	Broken/Damaged	$\vdash$	-i '	ion Incomplete	<u> </u>	Part Incorre	}	Weld
	$\vdash$	ed/Crimped	Ė	<u> </u>	Burrs		4	ions Incomplete/	'Unclear	Part Lost/M	ssing	Wrong Stock Pulled
,	Cuffs				Contamination	<u></u>	Mainte		<u> </u>	Part Moved		
	Heat				Countersink	<u></u>	Mislabe			Positioned \		<b>-1</b> .
		ction Strip i	n Tube	<u> </u>	Cut Too Short	$\vdash$	Misrea	i i		Power Loss/	Surge	Other
	⊢ ∵	es in Bend		_	Drill Holes	$\vdash$	Offset				· · · · · · · · · · · · · · · · · · ·	
	Torqu	e Waves in	Extrusio	n	Drawing	1	Out of	Calibration				

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Finish

Folio

Work Order ID:

101643

Parent Item:

D2052

Parent Item Name:

Mounting Bracket

**Start Date: 5/13/13** 

Required Date: 5/31/13

**Start Qty: 10.00** 

Required Qty: 10.00

**Comments:** 

IPP C01.08.21Added Finishing SM(Issue this IPP with part number D2053)

07-10-25 DD

IPP Rev:D now water jet

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M5052H32S.090 5052-H32 .090 Sheet		Purchased	No			100	sf	100.2600	0.129	1.357895		& 13	3.11.0
				<b>Location</b>		Loc Qty	<u>Lo</u>	c Code					
				MAT022		100.26							
				11864	41	20.26							
				12178	30	16					,	. <i>+ t</i>	
				12555	52	64			12	5552		<sup>7</sup> 4	, 00

NCR: Y	'es / No				WORK ORDER NON-C		NFORM	MANCE / UPI	DATE			
					_					QA Closed:	Date:	
Work Orde	oř.				DISPOSITION		!	·	AGAINST DE	PARTMENT,	/PROCESS	
VVOIN OTGE					Rework			Skid-tube	Crosstube	]	Water Jet	Engineering
Part N	lo.				Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is		Thern	noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	lo				Work Order Update			Large Fab	Composite	]	Supplier	
Root				Descri	ption of work order update	ŀ	nitial	Act	tion	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Ch	ief Eng	Desci	ription	Date	Verification	QC Inspector
Doc/Data												
Equip/Tooling						1						
Operator												`
Material												
Setup				:								
Other			1 .									
Process	$\vdash$											
Supplier												
Training	$\vdash$					l						
Unapproved	<u> </u>	!	<u> </u>			<u> </u>	T CATE	GORY		l	[	1
Landi	ng Gear				General							
	Bending	<u>.</u>		<u> </u>	Bend		Grain		Г	Ovalized		Pressure/Forced
		, Not Conce	ntric to	o/s	BOM/Route		Hardwa	ire		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged		inspect	ion Incomplete		Part Incorre	ct	Weld
	Crushed	d/Crimped			Burrs		Instruct	tions Incomplete/	Unclear	Part Lost/M	issing	Wrong Stock Pulled
	Cuffs		•		Contamination		Mainte	enance		Part Moved		<b>-</b> ,
	Heat Tr	eat			Countersink		Mislabe	eled		Positioned \	Vrong	_
	Inspect	ion Strip ir	1 Tube		Cut Too Short		Misrea	d		Power Loss/	Surge	Other
	Ripples	in Bend			Drill Holes		Offset					
•	Torque	Waves in	Extrusio	on 🗀	Drawing		Out of	Calibration		****		
	Turning	Sequence	2		Finish		Out of	Sequence				

Outside Dimensions

DQA:

Date:

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Wave/Twist in Tube

Folio

DART AEROSPACE LTD	Work Order:	101643
Description: Bracket	Part Number:	D2052
Inspection Dwg: D2052 Rev: D		Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

X First Article	Prototype
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Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.197 x 0.331	+0.005/-0.001 x +/-0.010	.197× .330	**		V	JKM-01
Ø0.641	+0.008/-0.001	.641	_		V	
0.400	+/-0.010	.400	G#		V	
0.800	+/-0.010	,800	-		V	
0.400	+/-0.010	.400			v	
1.22	+/-0.030	1,99	-		V	
3.237	+/-0.010	3,236	-		V	
1.24	+/-0.030	1.24			V	
3.200	+/-0.010	3,199	-	"	V	
4.000	+/-0.010	4.000	-		V	
4.80	+/-0.030	4,80	_		V	
0.090	+/-0.010	.087	-		V	
				1		
					-	

Measured by:	Ac	Audited by:	DAS 27	Prototype Approval:	N/A
Date:	13.11.03	Date:	17 11 OV	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.06.11	New Issue	KJ/DD 🔣	

